4710
INTERNATIONAL WORST CASE SPILL
LOCATION:

Pacific Ocean in Mexican waters.

SCENARIO:

A. At 0900 on a Thursday in October, the T/V Mas Petrol was enroute to a refinery in Mexico when it lost power and went aground, 5 miles south of the US/Mexico boarder. The T/V was laden with 122,365 barrels of #6 fuel oil. The grounding caused multiple through hull ruptures and the discharge of all of the #6 fuel oil.

B. The wind is WNW from the east. The tide is in the seasonal high ranging from +6 to -1.5. Currently the tide is at low slack water with flood stage to occur in 3 hours. The air temp is in the mid 70's and the water temp is in the low 60's.

C. Actual and potential area affected include:

1) North San Diego Bay.
2) San Diego Bay entrance.
3) Tijuana River Estuary.
4) Silver Strand.
5) Coronado Beach.
6) Northern Baja shoreline.
7) Los Coronados Islands.

D. The required response action elements are listed in chronological sequence. These include initial actions, spill response organization, containment, countermeasures, cleanup strategies, resource requirements, available resources, sources of procurement, time necessary for clean up, disposal options, and demobilization. The following response strategies for this scenario, and estimated times are for planning purposes only.

DAY ONE

1) 0-6 hours (0900-1100)

At 0900, USCG MSO receives notification from Clean-up Contractors of the grounding of the T/V Mas Petrol and the spilling of its cargo. The Coast Guard initiates all internal and external notifications including: NRC, OES, Local OSPR office, Port of San Diego, USN Port Operations, San Diego ODP, District 11, NOAA SSC, RRT and USCG PAC STRIKE TEAM. CG and OSPR initiate internal recalls and mobilize Unified Command using the ICS structure. Command Post is located at the CG Activities San Diego.

At 0920, USCG MSO opens OSLTF with initial 100k ceiling to cover CG costs, and to protect US waters from possible impact of oil. Coastal Cleanliness is contracted to provide two off shore recovery vessels to skim any on water product that crossed into US waters. ETA on scene is 2000.

At 0940, MSO SD immediately requests to launch a helo overflight in Mexican airspace, request denied by Mexican government because Mexican government states that it has the situation under control and does not need the assistance of the US. MSO Pollution Investigator departs for Tijuana River Estuary via response vehicle. A Broadcast Notice to Mariners (BNTM) is issued advising mariners to use caution

while transiting the affected area off shore. Predesignated FOSC (USCG Commanding Officer of MSO SD) initiates ICS organization. OSPR investigators dispatched from Kearny Mesa office and OSPR Warden recalled from Oceanside to respond.

At 1010 rcvd authorization to fly into Mexican airspace for aerial observation after contacting local congressman's office for assistance. At 1100 completed overflight of spill. Observed a large black slick, approximately 4 miles in length stretching from the grounded ship to the North. The oil has impacted shoreline from approx. 1 mile north of the grounded ship. Slick is marked with a data marker buoy. Visual observations show the slick migrating North towards the United States. Grande Oil has contacted their contracted OSRO to respond to the spill. CO MSO SD determined immediate action by local contractors was the best course of action to protect U.S. Waters and adjoining shorelines from potential pollution. The FOSC and SOSC decide that the Tijuana River Estuary (TJE) is the first priority for protection and the shoreline berming strategy should be immediately implemented. Border field State Park will be the staging area. At the request of the FOSC County Health closes the beach from the international border north to the Imperial Beach pier pending the arrival of the oil in U.S. waters. Local contractors, CG and State reps converge on the TJE to coordinate berming the estuary. By 1145 CG, State and contractor reps determine that the berming strategy in the ACP is invalid due to the extreme high tide. With the help of the TJE Stakeholders an inter estuary booming strategy is developed and implemented. Initial press release sent. PAC Strike Team and PIAT mobilized. SSC is en route.

2) 6-12 hours

The Unified Command has been fully established with secondary and tertiary notifications made to: SCIC, Trustees for all South San Diego resources at risk and Sea World bird rescue center. A representative from the Mexican Consulate is invited to the Command post to act as a liason between the U.S. and Mexico. CG Headquarters is pursuing proper channels to provide assistance to Mexico should they request it. Initial contacts between the U.S. and Mexico result in Mexico declining U.S. assistance stating that the spill was under control. FOSC analyzes use of dispersants and or possible in-situ burning. Parameters have been exceeded for both options and are ruled out as strategies. At 1230 between local contractors and USCG have deployed 2000 ft of tidal boom within the TJE. Second overflight reveals slick has impacted most of the shoreline from the spill site north to the border and is still moving north. DMB and visual observations show the slick is still moving north. FOSC requests CG VOSS system be deployed, ETA on scene from LA/LB is 0800 the next morning. FOSC requests the assistance of the US Navy for pre treatment of the beaches, providing boom, storage of waste oil and dock space for incoming off shore recovery vessels (OSRVs). The Navy, local contractors and volunteers totaling 350 people scour the beach from the TJE North to North Island NAS removing debris from the beach.

At 1400 oil begins to impact the southern end of the TJE. The inter-estuary boom strategy is working to protect most of the estuary but the entrance to the estuary is severely oiled. The entrance area includes several least tern nesting sites. The FOSC requests that the Navy attempt to use their harbor skimmers in an offshore capacity. The first skimmer returns to SD Bay shortly after passing Point Loma as the sea conditions make the small skimmer ineffective. All Navy skimmers are staged at Ballast Point in case the seas calm or the slick reaches SD Bay. The entrance to SD Bay is boomed off in anticipation of the oil continuing North. SD Bay is closed to all traffic except those vessels involved with the cleanup.

3) 12-24 hours

Coastal Cleanliness skimmers arrive on scene but can not commence skimming ops due to darkness. SD Bay entrance boom is opened to allow the two OSRVs to tie up at the Sub Base. Breaking the boom results in sheening inside the boom.
Command post is now sagging under the weight of all the parties involved and moved to the CG Air Station Hangar to accommodate all the folks.

A first light overflight is planned along with implementing a secondary tiered boom strategy for the entrance to SD Bay. Shoreline Contamination Assessment Teams (SCAT) will be deployed at first light from the Border North to the entrance of Mission Bay. Media interest is frenzied with interest reaching to the international level.

News vans are setting up outside the CG Base as well as along the beach areas of Coronado. Cost ceiling is bumped to One million dollars. CG contracting officer and National Pollution Fund Center Personnel requested to respond to the spill that has been dubbed the "MAS PETROL SPILL".

DAY TWO

First light overflight is used to map the spill. Beaches heavily impacted from Zuniga Jetty south to the Border. The beaches from Point Loma North have not been impacted. Slick extends from the entrance of San Diego Bay all the way South to the spill site. Overflight reveals grounded vessel is boomed off and the Mexican Navy has offshore skimmers deployed as well as several hundred beach cleaners working.

OSRV Skimmers are directed to heaviest concentrations.
Secondary boom is placed in a tiered deflection strategy at either end of the containment area to direct the oil to collection sites as the tide washes in and out.

By noon the CG Cutter with the VOSS is on scene and actively collecting product
Shoreline clean up has been initiated on Coronado and Imperial beaches along with the Silver Strand. Press conference was held with CO MSO SD, SOSC and the Representative from the Mexican Consulate. PAC Strike Team on scene as well as, NOAA SSC, USCG PIAT, additional OSPR personnel and additional personnel from local and regional contractors.

Oiled birds are washing up along the beaches and being transported to Sea World for rehab. Authorized ceiling for the spill is raised to 500 K to cover costs and is expected to be bumped up again as burn rates for contractors and public agencies are captured. Midday overflight reveals the slick has stopped at the entrance to SD Bay and the on water product is swirling around the entrance, washing ashore and being moved by wind and tidal conditions. NRDA unit established. Media interest has increased to a frenzied level.

DAY THREE

Amount of on water oil is starting to decrease as more is skimmed and washed ashore. Heaviest concentrations remain near the Tijuana River Estuary

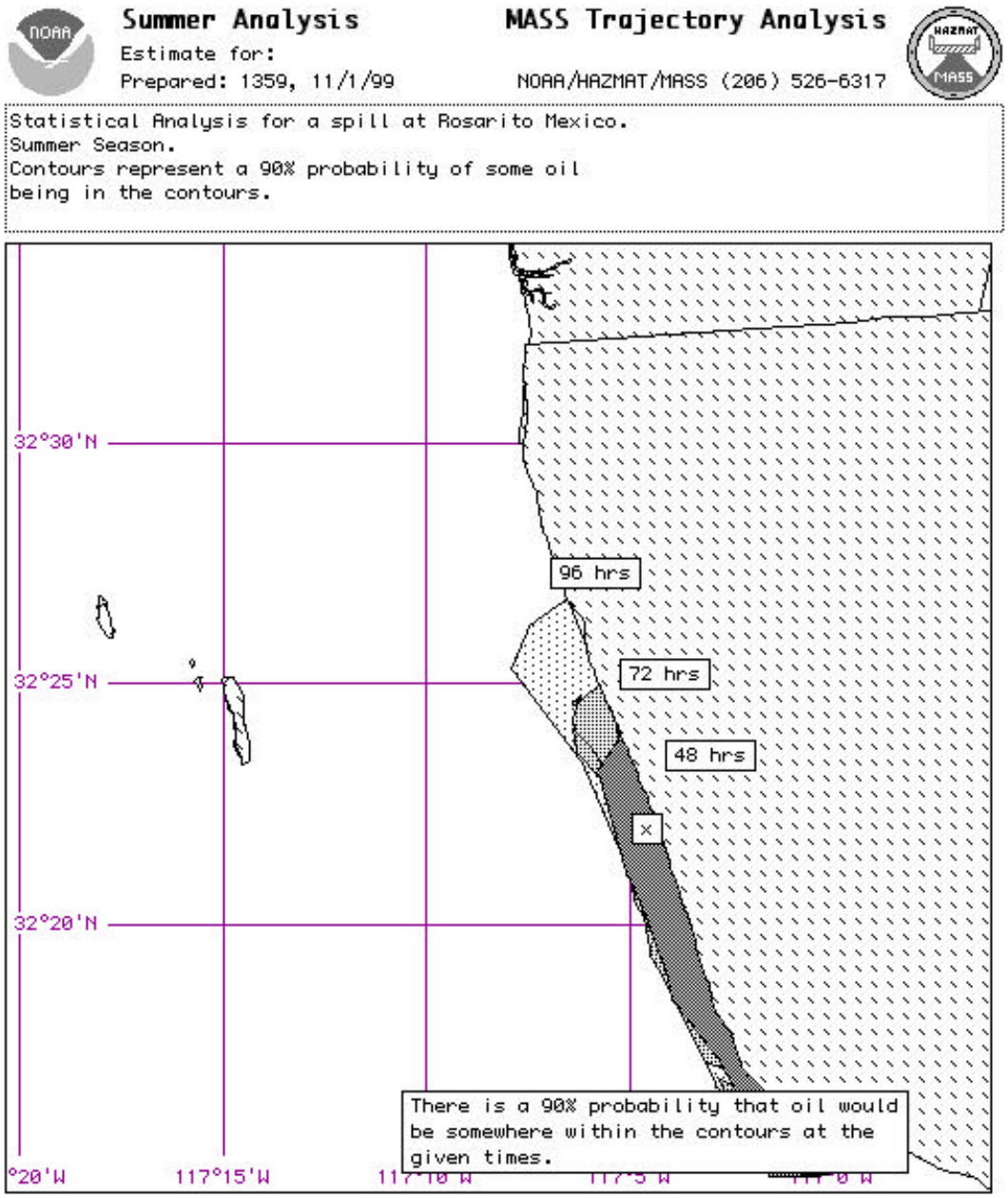
Imperial Beach and Coronado Beach are still closed to the public; Coastal Cleanliness and CG skimmers remain in service. Beach clean up is on going and will continue for many days possibly weeks. The weather is the typical night and morning low clouds burning off in the afternoon with late morning to early afternoon winds out of the west at 6-8kts. Equipment decon station is fully operational at Ballast Point. The State Department is working on liability issues with the Mexican Government.

DAY FOUR-END

Skimming ops become unfeasible and all skimmers are demobilized and decontaminated.
Bird rescue center remains open actively trying to rehab oiled birds. NRDA is in full swing. NPFC has set up a claims unit, which is sifting through a barrage of claims. News coverage eventually dies off, as the story grows stale. The City of San Diego sees a large economic boom tied directly to the oil spill. The spill is being called the "Tijuana Estuary spill". Beach clean up and rehab will be underway for weeks as more oil washes ashore.

Revised: 01/01/00

Attached are two trajectory maps. These two trajectories were actually run for the MAY99 Pemex spill. Although these trajectories are for a point several miles South of this scenario the rates of movement and direction of movement remain valid for this scenario.

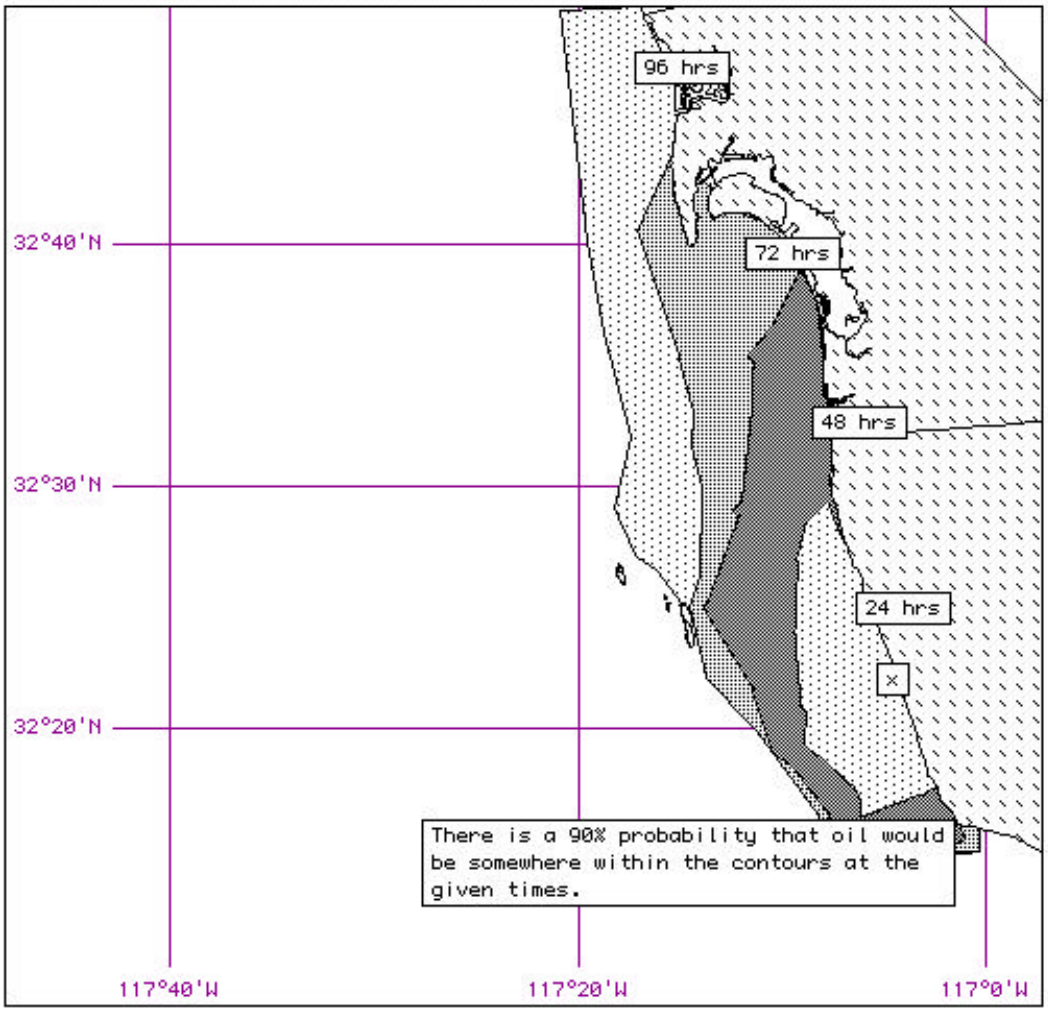


Winter Analysis **MASS Trajectory Analysis**

Estimate for:

Prepared: 1359, 11/1/99 NOAA/HAZMAT/MASS (206) 526-6317

Statistical Analysis for a spill at Rosarito Mexico.
Winter Season.
Contours represent a 90% probability of some oil being in the contours.



4720

WORST CASE SPILL (Water)

LOCATION:
Adjacent to San Diego entrance channel buoy “7"

SCENARIO:

A. The 678 ft, fully laden (190,000 bbl) USN oiler USS *Supplier* is outbound from the Naval Fuel Depot Point Loma. The tug BIG BOY, with the 300 ft commercial tank barge *California* in tow, is inbound San Diego entrance channel. The *California* is loaded with 70,349 bbl #6 residual fuel oil. At 0500 on a February morning the *California* collides with the oiler in heavy fog adjacent to San Diego entrance buoy 7. An explosion results, and fires break out in a ruptured JP5 cargo tank splitting the oiler in two. The fire burns out as the bow and stern sections sink resulting in a near instantaneous release of one-third of the cargo (approximately 60,000 bbl of DFM and JP5 fuel oils). Cargo, fuel, and lubrication oil continues to leak at a rate of about 1,000 bbl/hr. A large gash below the waterline along the port side of the barge damages all seven port tanks. Approximately 25,000 bbl of #6 fuel oil are immediately released in the entrance channel. The barge continues to leak at a rate of 500 bbl/hr.

1) AMOUNT SPILLED: 261,000 bbl over six days

2) TYPES OF OIL: DFM, JP5, lube oil, and #6 residual fuel oil

B. The wind is W/NW at 5 kts, seas are 1-2 ft from the west. The tide is at flood stage, with slack water due to occur in 3 hours. By 1700 on the day of the spill, a winter storm has produced winds of 20-25 kts from the south, gusting to 40 kts. By 0500 the next day the storm subsides and winds return to W/NW at 5 kts for the duration of the modeled spill.

C. Affected and potentially affected areas throughout the course of this scenario include:

1) Northern San Diego Bay;
San Diego Bay Entrance (Environmentally Sensitive Site priority A)
Mammal pens (ESS priority A),
Magnetic silencing pier beach ESS priority B),
Shelter Island marina (Economically Sensitive Site priority E),
Commercial basin (ESS priority E),
Harbor Island marina (ESS priority E)

2) Point Loma (ESS priority C);
Point Loma Cabrillo National Seashore (ESS priority C);
Point Loma marine mammal haulout (ESS priority A)

3) Coronado, and Silver Strand beaches (ESS priority C)

5) Mission Bay (ESS priority A)

6) San Diego River (ESS priority A)

7) Ocean Beach, Mission Beach and Pacific Beach (ESS priority C)

8) La Jolla (ESS priority C)

9) Imperial Beach (ESS priority C)

10) Tijuana River Estuary (ESS priority A)

11) Tijuana shoreline (Mexico)

12) Los Coronados Islands (Mexico)

D. The required response action elements are presented in chronological sequence. These include initial actions, spill response organization, containment, countermeasures, cleanup strategies, resource requirements, available resources, sources of procurement, time necessary for cleanup, disposal options, and demobilization. The following response strategies for this scenario, and estimated times, are for planning purposes only.

Table 1. Response Capability Requirements Prescribed by State Regulations.

SKIMMERS*		STORAGE		BOOM
12 hr	2,500 bbl/day	12 hr	31,000 bbl/day	1,000 ft or 2x vessel length
36 hr	15,625 bbl/day	36 hr	60,000 bbl/day	
60 hr	53,125 bbl/day	60 hr	60,000 bbl/day	

* - Derated Capacity

DAY ONE

1) 0 - 2 hours (time: 0500-0700 hrs)

USCG Group San Diego receives notification from the tug *Big Boy* via CH16 at 0500. *Big Boy* reports its location and condition as per above scenario, states intentions, and establishes comms schedule. Tug also notifies company owners via cellular telephone,

The USS *Supplier* notifies CINCPACFLT and COMNAVBASE SAN DIEGO, who then implement their notification procedures. COMNAVBASE dispatches two YTB's to assist.

Activities San Diego notifies the MSO Duty Officer and immediately dispatches a 41" UTB to assist. SAR and firefighting response is initiated IAW USCG District Eleven SAR plan and MSO San Diego Burning Ship Plan. Due to the heavy fog, no aircraft can be sortied. Search and rescue concerns are exclusive of all other concerns. For the purpose of this response strategy, SAR details are assumed executed.

The Coast Guard initiates all internal and external notifications including NRC, Navy Port Ops, Navy Southwest Region Security Office, CA OES, CA Fish and Game (OSPR), San Diego ODP, District Eleven, and scientific Support Coordinator (SSC). CG and OSPR initiate internal recalls and mobilize UCS/ICS. D11 activates the RRT. SSC mobilizes the SSC network. D11 DRAT en route. Sate of California Cultural Resources specialists are notified.

CG MSO San Diego (predesignated FOSC) initiates pollution and casualty investigation efforts. CG Pollution Investigator and Marine Inspector en route via WPB (or other designated

platform). OSPR investigators en route MSO San Diego.

Tug BIGBOY attempting to pull barge off jetty. CG COTP issues order to stop until full investigation evaluation can be made. The tug remains standing by to assist.

COTP establishes Safety Zone closing San Diego Bay from the entrance buoy to the Coronado Bay Bridge. Two Harbor Police vessels on-scene to assist in controlling vessel traffic Broadcast Notice to Mariners initiated.

COMNAVBASE San Diego assumes responsibility for the U.S. Navy portion of the spill. USN Oil Recovery Teams at all San Diego Navy facilities are placed on alert with 7 skimmers ready to be deployed when the fog lifts providing 1,400 bbl/day immediate skimming capacity (Table 2). Navy SUPSALV alerted; 11 skimmers en route, ETD 48 hours.

National Strike Force Coordination Center (NSFCC) alerted. Pacific Strike Team mobilized. Requested PST COMCEN, OWOCR's 32" Munson boat, salvage pumps, storage equipment, cost doc, and one VOSS. ETA 8hrs. CG Public Information Assist Team (PIAT) dispatched.

Tug RP reluctant to assume financial responsibility for the spill due to the Navy involvement. Qualified individual identified and en route San Diego. Due to magnitude of spill and involvement of two parties and lack of action on the part of the civilian RP, FOSC notifies vessel RP and COMNAVBASE of federal assumption. FOSC opens pollution fund, requests initial $5 million obligation ceiling to cover anticipated clean up and Coast Guard costs. OSPR opens California pollution fund. Regional open water recovery assets contracted and dispatched. OSPR and MSO LA/LB agree to release CCW assets from higher volume port. MSRC under contract to Coast Guard. Clean Seas requested, but authority to depart zone remains a question, as well as contracting specifics.

Initial press release issued. District Eleven public affairs staff establishes press operations.

2) 2-6 hours (time: 0700-1100 hrs)

USN oiler is sunk in channel, with masts and upper decks visible. Fire is completely out. Initial reports indicate oil covers entrance channel to Point Loma. Full extent of slick remains undetermined due to fog.

ICS Planning section is working on evaluating barge diagrams and what to do with the barge, assess vessel's current status, identify cargo and condition. Barge tanks sounded, loss rate estimated. SSC provides initial verbal slick trajectory forecast. During the first 12 hours oil is expected to impact Point Loma and Ocean Beach, upper San Diego Bay and Coronado Beach, and threatens the San Diego River. Within 2 hours, a winter storm is expected to arrive, with winds veering to the south maintaining sustained velocity of 30-35 kts, and gusting to 50 kts. The storm effects will tend to drive the oil southward. SSC then departs en route San Diego, ETA 2hrs.

Table 2. On-water skimming response capabilities (bbl/day derated) available from OSRO's. The listed equipment is a limited listing of resources identified in the ACP. These sources represent major equipment providers in the southern California region.

OSRO	Less Than 4 Hours	12 Hour Capability	24 Hour Capability
NAVY	7 Skimmers@ 200 ea.		1-DESMI 1-VOSS
CCW		2-OSRV@ 10,000 1-OSRV 10,000 w/approv. 1-VOSS 3,000	1-Lori 4,900

		1-VOSS 1,300	
MSRC	1-Skim plat 1,317	3-VOSS 3,017 2-Skim plat. 3,700	1-Calif. Resp. 10,000 1-Skim Plat. 1,371
FOSS	Marko Belt 2,050		
ACTI		1-Marko 1 2,050	
Total	4,767	33,067	16,271
Total Cumulative		37,834	54,105

Establish initial Unified command Post (UCS) at Marine Safety Office San Diego. City of San Diego EOC activated. Begin addressing health and safety issues for response personnel and community-at-large. Vessel RP/QI initiates ICS and internal response organization.

SUBBASE Point Loma designated as primary staging area.

Beach survey (SCAT) teams dispatched to Ocean Beach and Coronado. CA F&G 45' patrol boat TUNA activated. County Emergency Operations Center manned. CCW rep on-scene.

COMNAVBASE (N3) arrives at JCC.

Active planning and prioritizing of resources at risk begins. Significant threatened resources identified are:

Point Loma: rugged, rocky coastline.
Harbor seal haulout: vicinity of Point Loma sewage outfall.
Mission Bay
San Diego River
San Diego Bay
Navy Marine mammal pens
Marine birds and mammals: wildlife Rehabilitation Resources activated.
Tijuana River Estuary

A **protection strategy** is developed to minimize further oil impacts, although it will be complicated by the impending storm. Surf conditions make it impractical to protect ocean beaches and most of Point Loma. Protection efforts will focus on un-impacted inlets.

Priority One: In consultation with Cultural Resource Specialist, deploy protective boom across NW shore inlets within San Diego Bay, from the mouth to Harbor Island. Deploy 2,000' of protective boom along around the USN marine mammal pens. Deploy 3,900' of exclusion boom at the entrance of San Diego Bay in a “V” configuration. Deploy 4,000' of deflection boom between Ballast Point and NAS North Island.

Priority Two: Construct a sand berm across the Sand Diego River along with secondary boom. Deploy protective boom strategy at Mission Bay (5,700'). Encircle the oiler and barge with containment boom to reduce spread of oil continuing to leak (3,500').

Priority Three: Line the remainder of the NW shore inlets within San Diego Bay, from the mouth to Harbor Island. Deploy 1,000' of exclusion boom across the entrance of Shelter Island marina. Deploy 2,000' of exclusion boom across the entrance of Commercial Basin. Deploy five 500' sections of deflection/collection boom along North Island (2,500'). Deploy three 500 ft sections of deflection/collection boom along NW shore from Shelter Island to Harbor Island (1,500'). Deploy 1,500' of exclusion boom across the entrance of Harbor Island marina and Naval Station marina. Immediately after the storm passes, deploy 3,000' of ocean boom to deflect oil away from the Mission Bay/ San Diego River entrance.

Use of alternative countermeasures is considered. Although the initial fire on the oiler is estimated to have consumed 25% of the spilled oil, further in-situ burning is rejected. The lack of available fire boom in southern California, proximity to populated shoreline areas, necessary restrictions on other response vessel activities, and the impending storm make it an impractical alternative. Dispersants are considered. Due to the very heavy viscosity of #6 RFO, dispersants are expected to have little effect. Near shore environmental concerns are also considered a problematic issue. The much lighter DFM dissipates and evaporates somewhat on its own, and will be rapidly dispersed in the forthcoming storm. Additionally, the shallow-water environment near sensitive areas is not a desirable candidate for dispersing the oil into the water column. Dispersants are rejected.

Table 3. Day One Booming Capability Necessary to Contain Vessels and Threatened Environmental and Economic Sensitive Sites.

BOOM LOCATION	BOOM LENGTH (ft)
USS *Supplier*	1,400
Tank Barge	1,000
Entrance to San Diego Bay	7,900
Magnetic Silencing Facility Beach	1,500
Marine Mammal Pens	2,000
Shelter Island Marina	1,000
Commercial Basin	2,000
Harbor Island Marina	1,500
TOTAL	18,300

Cleanup will rely on mechanical recovery by skimmers and manual shoreline remediation.

Table 4. Boom Available for Response Strategies Execution.

Equipment Provider	4 Hr Response Time	12 Hour Response Time
Navy	4,000 ft	10,000 ft
ACTI	6,500 ft	10,000 ft
FOSS	8,000 ft	36,000 ft
CCW	---------	Offshore only
MSRC	4,000 ft	21,600 ft
USCG	2,000 ft	

Total	24,500 ft	77,600 ft
Total Cumulative		102,100 ft

An additional Safety Zone is established closing Mission Bay.

3) 6-10 hours (time: 1100-1500 hrs)

Fog clears. Air station San Diego HH-60 helicopter makes first overflight for spill assessment. OSPR fixed wing airborne for surveillance. Additional staging areas are established at SUBBASE, the NASNI "old" CPO club, Shelter Island boat ramp, and Dog Beach at San Diego River mouth. Components of UCS forming. USCG PST representatives on-scene. SUBBASE ORT encircles barge and tanker with boom. Response contractor is assigned to construct protective sand berm across San Diego River and deploy protective boom strategy inside Mission Bay. Protective booming of Shelter Island Yacht Basin, commercial Basin, and West Basin (Harbor Island) by NASNI ORT and 32nd ST ORT. All available ORT skimmers deployed off Ballast Point to recover incoming oil. Total skimming capacity established at 1,400 bbls/hr.

Identify shortfall of barges to lighter the barge and temporarily store oil recovered from water. Contract with FOSS/Crowley/Wilmington barge companies to provide 100k bbl capacity from Long Beach. ETA 8-12 hours. Nine USN yard oilers (total 62-k bbl capacity) pressed into service to begin lightering barge. COMNAVBASE provides USN divers to conduct underwater assessment on sunken USS SUPPLIER. Towing RP contracts divers to make underwater assessment. Salvor hired and en route. Beach surveys report heavy oiling of Zungia Point (ocean and bay sides), north Coronado Beach, and Point Loma. Light oiling reported on Ocean Beach. County authorities close Ocean Beach, continue to monitor Coronado and the Silver Strand. Health and safety parameters established. Safety plan developed. RRT convenes at Naval Base San Diego. NOAA delivers first hard-copy oil spill trajectory; confirms initial verbal report. Trajectory provided for #6 oil, but will evaporate and dissipate rapidly. Much of the lighter oil will disperse in the anticipated storm.

4) 10-14 hours (time: 1500-1900 hrs)

UCS continues to grow. OSPR Administrator on-scene. FOSC Unified Command holds press conference at 1400. Afternoon overflight reveals slick extending around Point Loma to Ocean Beach, extending up to 2 NM offshore. Heavy concentrations of beached oil reported from SW Point Loma to Ocean Beach. Weather deteriorating as storm approaches.

On-scene reports indicate that oil continues to leak at a rate of 1,000 bbl/hr from the oiler and 500 bbl/hr from the barge. Protective booming operations continue.

San Diego county ODP coordinates beach pre-cleaning with Naval Station North Island and the cities of Coronado, Ocean Beach, Pacific Beach, mission Beach, and the California conservation Corps (CCC) using a combination of manual labor and heavy equipment. CCC provides Beach cleaner training. An estimated 300 laborers are needed for Coronado, and 200 for Mission Beach. Pre-clean operations will be scheduled to begin at 0700 day two. USCG, OSPR, and USN investigations have been opened to determine the cause of the spill. An oil sampling plan is established to aid in establishing later responsibility for cleanup costs.

5) 14-18 hours (time: 1900-2300 hrs)

San Diego River berm construction continues. Most priority 1 and 2 booms in place. Priority 3 booming begins and is suspended when the storm hits. Crews are assigned to tend booms through the storm and night. Lack of sufficient boat crews to maintain 24 hr/day operations becomes a concern. Equipment continues to arrive from outside the area, and is directed to the appropriate staging area. CG Pacific Strike Team equipment arrives. USN SUPSALV representative arrives.

6) 18-24 hours (time: 2300-0500 hrs)

Planning continues into the night. USCG PST and USN SUPLALV are assigned to develop plans to lighter remaining oil from the sunken oiler. CCW conducts aerial surveillance with the RIOSS system to map the movement of the oil during the night.

DAY TWO (from 0500)

The storm subsides by 0500, with the wind returning to W/NW at 5 kts, tending to drive the floating oil ashore and farther up San Diego Bay with the tides. Oil continues leaking at 1000 bbl/hr from the oiler, and 50 bbl/hr from the barge. Much of this oil gets caught in the circular current south of the San Diego Bay entrance, eventually moving up San Diego Bay with the tides, or beaching on Coronado/Silver Strand. CG AIRSTA San Diego launches a dawn overflight to map the spill following the storm. Oil is reported beached from Point Loma north to Mission Beach. A heavy sheen extends 2 NM offshore, with large patches of brown oil and black tar patties. Black oil is working its way south along Coronado. Late morning and afternoon overflights are also made.

CCW, MSRC, Clean Seas, and SUN SUPSALV skimmers arrive on-scene within excess of 57,000 bbl/day of skimming capacity. MSRC skimmers are assigned to recover the farthest offshore oil. The Clean Seas and larger CCW skimmers are assigned to nearshore recovery. The remaining skimmers are assigned at the San Diego entrance and within the bay. San Diego County ODP continues to coordinate beach pre-cleaning activities on un-impacted areas of beaches. Local contractors are hired to provide vacuum trucks to collect oil at each diversion boom on Naval Station North Island. Local contractors also provide manual laborers to remove oil stranded on the beaches. Beach cleaning activities must be conducted with consultation from Cultural Resource Specialists. Additional laborers are brought in from the LA.LB area. Navy ORT provides additional vacuum truck resources.

NOAA, OSPR, and local trustees begin joint injury determinations for the Natural Resource Damage Assessment (NRDA). Wildlife impact reports are being received from multiple sources and are confirmed by on-scene responders. Sea World coordinates with OSPR the establishment of wildlife collection and triage stations at the mouths of Mission and San Diego Bays. International Bird Rescue arrives and establishes a rehabilitation center of San Diego. Teams are assigned to survey impacted areas for injured/oiled wildlife.
USN SUPSALV and USCG PST personnel begin lightering from the oiler. Lightering of the barge continues. Recovering 6000 bbl/day from the barge and 10,000 bbl/day from the oiler. A 1400 press conference is held.

Approximately 54,000 bbl of #6 RFO is estimated to have spilled by the end of the day. Approximately half is stranded ashore, and half remains free-floating. Skimmers recover approximately 12,000 bbl of oil during the first day of recovery efforts. Approximately 3,000 bbl of oil are recovered from ashore.

Priority Three booms are in place by the end of the day.

DAY THREE

Dawn, mid-day and dusk overflights are scheduled. A heavy sheen remains offshore north of San Diego Bay, but most recoverable oil has deposited ashore. Approximately 10 miles of beach are impacted from Coronado to Mission Beach in a uniform one-quarter inch swath that is 5 feet wide. Tar patties continue to wash ashore along the various beaches. Some slugs of black oil are still washing ashore on Coronado Beach. Protection efforts have been successful at keeping oil out of Mission Bay and the San Diego River. Oil has migrated into San Diego Bay past Shelter Island.

By the end of the day, the barge continues to sheen, but no recoverable product is left on board. An estimated total of 18,000 bbl have been lightered off over the past three days. Plans

are made to refloat the barge and tow it to a shipyard. The anticipated completion for this project is one week.

Cleanup priority is given to Point Loma. An estimated 10,000 bbl of RFO is estimated recovered by on-water resources, and 1,000 bbl by shoreside resources. Priority planning is given to re-opening of San Diego entrance channel. The channel is reopened to one-way traffic with USCG escort pending survey and marking of a temporary channel.

DAY FOUR THROUGH SEVEN

Overflights are reduced to twice daily. Press conferences continue to be held once per day. An estimated 11,000 bbl's of oil remain on the water, and 15,000 stranded on shore. Recovery resources are recovering 1,000 bbl/day ashore and 2,000 bbl/day on water. Up to 500 beach cleaners plus mechanical equipment is in use.

By day seven, 5,000 remain floating on the water in scattered patches. USCG begins demobilizing larger, more inefficient skimmers.

DAY EIGHT THROUGH THIRTY

Overflights reduced to once per day. Beach surveys and cleanup continues. By day eleven, most on-water recovery resources have been demobilized. Only the small ORT skimmers remain. By day fourteen, beach cleaning is becoming steadily less efficient as most of the oil is recovered. Beach cleaners are being demobilized in increasing numbers. Only 50 cleaners remain at work on beaches north of San Diego Bay, and 100 cleaners on beaches to the south. By day thirty, cleanup is reduced to picking up tarballs still washing ashore.

DAY THIRTY ONE TO NINETY

Clean up of tarballs and light oiling continues for the next two months. Organized beach cleaning is terminated on day eighty, with continued beach monitoring to day ninety. Unified Command reduces progress meetings to weekly. Incident Action Plans are scheduled to reflect the UC meeting requirements. Responsible parties are directed to develop a plan to restore damaged wetlands and shorelines. By day forty the containment booms can be removed. By day ninety cleanup is determined to be complete.

SHORTFALL ANALYSIS

1) No trajectory model is available because of the limits of computer models to mimic San Diego Bay currents, tides and wind forces. The trajectory model utilized for this exercise was created using reasonable oil movement estimates based upon familiarity of small spill movements, and known climatic and tidal considerations.

2) No attempt was made to quantify Coast Guard or other agency staffing requirements to support the Unified Command. But, due to the complexity and duration of this scenario a substantial manpower requirement is predictable.

3) Contractors may experience significant delay in responding to an incident that requires a substantial equipment deployment effort in early morning hours. Such delay could result in a rapid spread of product.

4730

MOST PROBABLE WORST CASE SPILL WATER
LOCATION:

The Oil Spill Co, adjacent San Diego Bay near 10th Ave. Marine Terminal.

SCENARIO:

A. At 1400 on Thursday in October, The Oil Spill Company (OSC) was conducting a transfer operation with the M/V SPILLS ALOT at the 10th Ave Terminal (Southern most manifold) and their own tank farm. The connection between the manifold and the transfer hose failed. The failure caused the fuel to shoot into the water outside of the boom in place around the vessel. The spraying fuel severely splashed the shore side PIC resulting in a 15-second delay to shut down the transfer. The transfer was shut down 35econds after the failure. The failure resulted in a release of 500 bbl's of DFM into San Diego Bay.

B. The wind is ENE (Santa Ana conditions) at 13 knots gusting to 18-20 kts, seas are 1-2 ft from the east. The tide is in the seasonal high ranging from +6 to -1.5. Currently the tide is at flood stage with slack water to occur in 4 hours. The air temp is in the mid 70's and the water temp is in the low 60's.

C. Actual and potential area affected include:

1) Central San Diego Bay.
2) South San Diego Bay.
3) Sweetwater Creek.
4) Delta Beach.
5) Coronado.
6) Chula Vista Nature Preserve.
7) Least Tern nesting area in the South Bay.

D. The required response action elements are listed in chronological sequence. These include initial actions, spill response organization, containment, countermeasures, cleanup strategies, resource requirements, available resources, sources of procurement, time necessary for clean up, disposal options, and demobilization. The following response strategies for this scenario, and estimated times are for planning purposes only.

DAY ONE

1) 0-2 hours (1400-1600)

USCG MSO receives notification from OSC of the above spill at 1415. The Coast Guard initiates all internal and external notifications including: NRC, OES, Local OSPR office, Port of San Diego, USN Port Operations, San Diego ODP, District 11, NOAA SSC and USCG PAC STRIKE TEAM. CG and OSPR initiate internal recalls and mobilize Unified Command using the ICS structure. Command Post is located at the CG Activities San Diego.

MSO SD opens OSLTF with initial 100k ceiling to cover CG costs.

MSO SD immediately requests to launch 41' Utility Boat (UTB) to asses the spill as well as an H-60 Helo overflight. The UTB is launched immediately with MSO personnel on board. Only two Helos are operational and one is conducting long range SAR. MSO Pollution Investigator departs for OSC via response vehicle. A BNTM is issued advising mariners to use caution while transiting South SD Bay. Predesignated FOSC (USCG Commanding Officer of

MSO SD) initiates ICS organization. OSPR investigators dispatched from Kearny Mesa office and OSPR Warden recalled from Oceanside to respond. The 41' UTB reports that the area between 10th Ave Terminal and the Coronado Bridge is heavily oiled and the slick is moving south. They estimate the leading edges of the sheen will be will be beyond the bridge in 30 minutes. CO MSO SD closes San Diego bay to all traffic south of the Marriott Marina. SD Harbor Police boats on scene to help control vessel traffic. While second helo is being prepped for overflight it is called out on SAR case. MSO SD Personnel dispatched to the top of the Hyatt Hotel to observe the spill.

AT 1405 OSC contacted their contracted OSRO to respond to the spill. OSC's contracted OSRO will not be on-scene for almost three hours. CO MSO SD determined immediate action was necessary and instructs OSC to immediately conduct a response or the CG would take over the response. OSC qualified individual recognizes the need for immediate action and hires local contractors to conduct response. The FOSC recognizes that more equipment and supplies will be immediately necessary to combat the spill and exercises a Memorandum of Understanding with the Navy to provide the necessary equipment. The FOSC and SOSC decide that the South Bay is the first priority for protection and the South Bay booming strategy should be immediately executed 24th St Marine Terminal will be the staging area. At 1430 local contractors are on scene and recalling personnel and equipment to cover the response as well as starting to deploy boom, boats and personnel. CG personnel dispatched to 24th St Terminal to coordinate booming of South Bay. OSC's OSRO is still mobilizing with skimmers and boom, their ETA is two hours. FOSC requested all US Navy skimmers be activated. 3 skimmers are already on the water and en route to conduct clean up. The other four will be on scene with in 2-3 hours. All available Navy boom already in the water is being collected and transported to the 24th St Marine Terminal as a staging area.

Initial press release sent. PAC Strike Team and PIAT mobilized. SSC is en route.

2) 2-6 hours

The Unified Command has been fully established with secondary and tertiary notifications made to: SCIC, Trustees for all South Bay resources at risk and Sea World bird rescue center. At 1630 between local contractors, US Navy and USCG 13,000 ft of boom has been deployed and is being placed in position from 24th St Terminal to the SE corner of the Naval Amphibious Base. By 1700 the South Bay boom strategy has been completely implemented with a modification closing the gap to NAB. The bulk of the spill is contained with in the boom but the leading edges of the spill are already past the boom. Long range SAR helo returns and overflies San Diego Bay. Overflight reveals Glorietta Bay is heavily impacted with oil. Shoreline impacted South of NAB to the A-6 anchorage and a light sheen exists with many fingers as far south as the Sweetwater Channel.

In order to prepare for the tide going out an additional 3000 ft of boom is ordered deployed from the Northern most point of 10th Ave Terminal due west, with a vac truck set up at the choke point for skimming ops.
Navy skimmers are skimming in the area just south of the Bridge in the most concentrated area.

3) 8-24 hours

Navy skimming ops continue through darkness with personnel reliefs occurring at 2200. Dusk and dawn overflights conducted to map extent of spill.
As more personnel and equipment arrive the Command Post is moved to ACTSD Hangar.

Media interest is frenzied with interest reaching to the international level.
Sweetwater Channel is boomed off. Glorietta Bay is also boomed off to prevent the oil from spreading in and out of the bay.

SCAT's are dispatched at first light to assess the area south of NAB. SCAT's report that the shoreline is impacted south to Crown Isle with the heaviest impacted areas being just south of NAB.
NRDA unit established.
11 dead oiled birds have been recovered and 21 oiled birds have been transported to Sea World.
In the morning of Day Two, 10 of the 21 birds sent to Sea World have died. More birds continue to be transported. Delta Beach (Least tern nesting area) is heavily impacted, USFWS, SCIC, OSPR, USCG DOE personnel on scene devise restoration/clean-up strategy.
Navy uses more boom to protect piers and moored vessels.
USCG VOSS is enroute on board 180' CG Cutter.

DAY TWO

First light overflight is used to map the spill.
Skimmers are redirected to heaviest concentrations.
Secondary boom is placed in a tiered deflection strategy at either end of the containment area to direct the oil to collection sites as the tide washes in and out.
By noon the CG Cutter with the VOSS is on scene and actively collecting product. OSC has established storage for skimmed oil at 10th Ave Terminal.
Shoreline clean up has been initiated on beaches South of NAB.
A vessel decon station has been set up at both ends of the containment area.
OSC's OSRO skimmers are placed into service in Glorietta Bay.
CG overflights continue but are becoming less effective because of the frequent live feeds from TV News helos.
Press conference was held with CO MSO SD, Owner of OSC, and SOSC.
PAC Strike Team on scene as well as; NOAA SSC, USCG PIAT, additional OSPR personnel and additional personnel from local and regional contractors.
Dead birds continue to be collected and become a focal point for the media.
Authorized ceiling for the spill is raised to 500 K to cover costs and is expected to be bumped up again as burn rates for contractors and public agencies are captured.

DAY 3

Amount of oil has greatly dissipated with round the clock skimming ops and continued hot dry weather. Heaviest concentrations remain in Glorietta Bay and around the Naval Station trapped within the piers. The South Bay Boom is broken and the northern point of the boom is placed at the western tip of NASSCO to encapsulate the bulk of the remaining product.
South San Diego Bay is open to commercial and Navy Traffic only.
Glorietta Bay is still closed to all traffic, OSRO and CG skimmers remain in service here. Beach clean up is on going and will continue for many days possibly weeks.
Tidal conditions have returned to average tidal hights and the Santa Anna wind conditions have dissipated. The weather is the typical night and morning low clouds burning off in the afternoon with late morning to early afternoon winds out of the west at 6-8kts.
Equipment decon station is set up at the OSC facility. Waterside vessel decon station has been set up at a facility just south of 10th Ave Terminal.

DAY 4-END

Skimming ops become unfeasible and all skimmers are demobilized and decontaminated.
Bird rescue center remains open actively trying to rehab oiled birds. NRDA is in full swing.
NPFC has set up a claims unit, which is sifting through a barrage of claims, many of which

appear to be fraudulent. News coverage eventually dies off, as the story grows stale. The City of San Diego sees a slight economic boom tied directly to the oil spill. The spill is being called the "10th Ave spill".

4740

MAXIMUM MOST PROBABLE OIL SPILL

LOCATION: Pier 6, Naval Station San Diego

SCENARIO:

A. Narrative of operation preceding the spill: While conducting a fuel offload at 1000 on a Tuesday morning in April, the Officer of the Deck aboard the USS NEVERSAIL smelled a strong aroma of diesel fuel at the mid-ship's quarterdeck. He reported the finding to the ship's Damage Control Central area by telephone, and the ship's Engineering Duty Officer (EDO) secured the fuel offload by manually switching off power to the ship's internal transfer pumps. EDO ordered the Sound and Security Rover to shut off the main fuel transfer valves. The Sound and Security Rover accidentally misaligned the fuel valve and caused 8,000 gallons of Diesel Fuel, Marine (DFM), number F-76 to be discharged into the San Diego Bay over a 20 minute period, until the misalignment was corrected.

B. Weather: Winds are light and variable, bay conditions are calm. Tide is 3 hours into the flood and predicted high tide will be 4.2 feet above the mean inter-tidal range.

C. Affected and potentially affected areas throughout the course of this scenario include:
1) San Diego Bay
2) Sweetwater Creek
3) Chula Vista Nature Preserve
4) Coronado
5) Least tern nesting area in the South Bay

D. The required response action elements are presented in chronological sequence. These include initial actions, spill response organization, containment, countermeasures, and cleanup strategies, resource requirements, available resources and sources of procurement, time necessary for cleanup, disposal options, and procedures for terminating the event. The following response strategy for this scenario and estimated times are for planning purposes only and do not reflect performance standards.

DAY ONE

1) 0-2 hours

The Engineering Duty Officer brought the ship to General Quarters for an initial oil spill response, and reported the spill to Port Operations at Naval Station San Diego, in accordance with local instruction. The Naval Station responded with two Boston Whalers to investigate the spill and was at the scene six minutes after the spill was reported. The Naval Station First Response Team (FRT) Leader initially estimated the spill at over 2,000 gallons and radioed for two boom

boats, two oil skimmers and four Boston Whalers to respond from Liquid Cargo at the Naval Station. In addition, the FRT Leader dispatched two additional oil skimmers and two additional boom boats from Port Operations, Coronado. Four additional craft were put on 5 minute stand-by notification from Port Operations, Point Loma, but they were not used immediately due to the length of their transit time to the scene.

The USS NEVERSAIL notified the USCG National Response Center (NRC) and the California State Office of Emergency Services (OES. The USS NEVERSAIL notified the Duty Officer for Navy Region South West.

The USS NEVERSAIL was the Pier Senior Officer Present Afloat (SOPA) and augmented their initial spill response with 18 additional personnel from two ships that were also berthed at Pier 6. The ship responders deployed seventy absorbent pads on the spill and deployed 500 feet of absorbent boom from the ship's oil spill response kits. Two additional response kits were used from the neighboring ships.

The Port Operations Duty Officer using the San Diego Bay Oil Spill Response Check List contacted the following by telephone:

- Naval Station Command Duty Officer (CDO)
- Naval Base Coronado CDO
- Naval Base Point Loma CDO
- Navy On-Scene Coordinator (NOSC)
- Port Operations Officer
- Waterfront Environmental Coordinator (WEC)
- Port Operations Leading Chief Petty Officer
- Marine Safety Office (MSO), San Diego

MSO San Diego Pollution Investigator on scene forty minutes after the spill was reported. MSO recalled personnel for ICS based response. All internal and external notifications made. The following designated areas were prioritized in order of significance:

1) Containment boom around spill sources (USS NEVERSAIL).

2) Boom deployed northwest from Mole Pier across the bay to south Coronado to reduce impact on sensitive south San Diego Bay areas.

3) Protective booming of Sweetwater Creek and Seventh Street channel.

4) Implementing the South Bay booming strategy.

The FRT deployed 3,000 feet of boom around USS NEVERSAIL and along the quaywall. The FRT had 80% of the spill contained, one hour after the start of the spill. The FRT laid out 350 oil spill pads, and the four oil skimmers recovered a total of 950 gallons. Two additional boom boats were recalled from Port Operations, Point Loma and were on-scene in 90 minutes.

Captain of the Port (COTP) established a Safety Zone, closing San Diego Bay from the Naval Station south. Broadcast Notice to Mariners initiated to minimize civilian vessel traffic. OSPR investigators on scene. FOSC requests to open OSLTF for $50,000 to cover Coast Guard costs.

2) 2-4 hours

FRT deploys 5000 feet of containment boom from Mole Pier.
MSO schedules and completes overflight. A Unified Navy/Coast Guard/State command is established at 32nd St Naval Station. Overflight reveals a heavy sheen across South bay from the 24th Street Marine terminal to 28th Street pier with scattered patches of brown oil. Oil is dissipating and is expected to evaporate rapidly under the sun. A press conference is held at the NAVSTA. Media interest is high locally with a few regional news agencies showing interest.

3) 4-8 hours

FRT skimmers continue to collect product from the containment area, while Port Operations Coronado and Point Loma skimmers target scattered patches of brown oil. Naval Station boom boats deploy boom across Sweetwater Creek and from the Silver Strand.

U. S. Fish and Wildlife rep on-scene and monitoring for wildlife impacts. Sea World is alerted. Injury Survey commences for National Resource Damage Assessment (NRDA).

4) 8-24 hours

NOAA SSC on scene providing trajectory and weather analysis. Skimmer operations continue until 2100, and commence at 0600 the following day until 1700. High tide is predicted at 4.3 feet above the mean inter-tidal range later that evening. Noon and sunset overflights continue to map the areas of collectible oil. The oil continues to evaporate rapidly and skimming operations are secured at 1700. A few patches of brown oil persist with extensive sheening. All booms remain in place. Four oiled Western Grebes have been transported to Sea World for rehab.

DAY TWO

A first-light overflight at dawn is used to map the extent of the oil. Skimmers are directed to observed patches of oil. Two of the four birds that were transported to Sea World have died. The second press conference is held with the local media. Protestors are picketing outside the Naval Base. A midday overflight shows that most of the sheen has evaporated. Some light sheening is still observed around the shorelines with small fingers of sheen running into the bay. The Silver Strand boom is removed, followed by the Mole Pier boom. The Safety Zone is disestablished.

DAY THREE TO END

A morning overflight reveals minor sheening still visible but no recoverable patches remain. Coronado and Point Loma skimmers are released. Boom still remains around the vessel but all other boom is broken and sent to the decon station set up on the Base. Two more birds are transported to Sea World for rehab. Media interest has declined and is no longer the top story. The Navy has set up a claims unit and a boat wash station to handle any possible claims.

The State decides not to pursue NRDA claims for the oiled birds. The Navy conducted an investigation as to why the valve was misaligned in the first place and why it took so long to find the misaligned valve. Results of the investigation were discussed at the Navy Regional Oil Spill Work Group (ROSWG). The ship put out a message to all similar ships with prevention measures to take to prevent similar spills.

4800 OPEN FOR DISTRICT/AREA COMMITTEE DESIGNATION

4900 RESERVED FOR HQ DESIGNATION

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